



December 3, 2020

The Honorable Christopher C. Miller  
Acting Secretary  
U.S. Department of Defense  
Washington, DC 20301

The Honorable Russell T. Vought  
Director  
The Office of Management and Budget  
Washington, DC 20503

The Honorable Michael J.K. Kratsios  
Acting Under Secretary  
Office of Research and Engineering  
U.S. Department of Defense  
Washington, DC 20301

The Honorable Kelvin K. Droegemeier  
Director  
Office of Science and Technology Policy  
Washington, DC 20504

Dear Acting Secretary Miller, Acting Under Secretary Kratsios, Director Vought, and Director Droegemeier,

As you develop the fiscal year (FY) 2022 U.S. Department of Defense (DoD) budget request, the Coalition for National Security Research ([CNSR](#)), representing the undersigned members of industry, academia, scientific and professional organizations, and non-profit organizations, respectfully requests you include funding for the Defense science and technology (S&T) program at levels equal to 3 percent of the DoD budget and funding for the defense basic research programs at 20 percent of the Defense S&T budget.

If the United States military is to maintain its global technological superiority, it is imperative that we robustly invest in the Defense S&T program. Many of the technologies that have sustained our military dominance stem from prior investments in the Defense S&T program. These include, stealth and counter stealth technologies, night vision, radar, sonar, nuclear propulsion, precision munitions, jet engines, near-real-time delivery of battlefield information, and global positioning technologies, just to name a few. Furthermore, the Defense S&T program is already laying the foundation and advancing capabilities in Industries of the Future (IotF) such as artificial intelligence/machine learning, quantum technologies, autonomy, hypersonics, advanced manufacturing, and directed energy. Investing in the Defense S&T program is essential to meeting many of the objectives in the *National Defense Strategy (NDS)* including sustaining Joint Force military advantages, establishing an unmatched twenty-first century national security innovation base, and ensuring we have the technologies to deter adversaries or succeed in future conflicts<sup>1</sup>.

With DoD being the second largest federal agency funding medical research<sup>2</sup>, the Defense S&T program is contributing to the fight against COVID-19. Developing point-of-care rapid testing, 3D printing personal protective gear, predicting pandemic trends, supporting decision-making

<sup>1</sup> <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

<sup>2</sup> <https://www.nap.edu/catalog/23652/evaluation-of-the-congressionally-directed-medical-research-programs-review-process>

about interventions, and understanding the national security implications of the COVID-19 crisis all stem from capabilities developed by investments in the Defense S&T program, including the defense basic research programs<sup>3</sup>. These efforts are consistent with the FY 2022 Administration Research and Development Budget Priorities, specifically the first priority of strengthening American public health security and innovation<sup>4</sup>. Additional investment can further enable scientific research to safeguard the health and quality of life of individuals, families, and communities, which is the top priority for the Administration<sup>5</sup>.

The United States is at a critical crossroads in terms of global S&T leadership and national security. China is likely to become the world's leader in research and development (R&D) investment soon<sup>6</sup>. From 2010 to 2017, United States federal investment in R&D fell nearly 15 percent while China's R&D investment increased by nearly 13 percent<sup>7</sup>. Using a simple inflation calculation, funding for Defense S&T provided in the enacted FY 2020 Defense Appropriations bill is nearly \$1.5 billion below levels appropriated in FY 2005. As noted by the Defense Science Board (DSB), inadequate levels of Defense S&T funding could threaten U.S. military dominance and leadership in the future<sup>8</sup>. The decline in R&D investment is particularly concerning considering that China now has the world's largest Army and Navy, and the third largest Air Force<sup>9</sup>. Innovation and sustained investments are keys to maintaining our global military superiority.

In an effort to reverse declining R&D investment trends and support the innovative scientific research needed to ensure global S&T leadership, CNSR joins the DSB<sup>10</sup>, bipartisan House Armed Services Committee Future of Defense Task Force<sup>11</sup>, National Academies<sup>12</sup> and Council on Competitiveness<sup>13</sup> to urge that the ***Defense S&T budget request comprise 3 percent of the overall DoD budget request***. Additionally, CNSR urges that the ***defense basic research budget request comprise at least 20 percent of the Defense S&T budget***, as recommended by the National Academies<sup>14</sup> and Council on Competitiveness<sup>15</sup>. We also note that the DSB encouraged one-third of the Defense S&T budget be dedicated to revolutionary research such as the defense basic research programs<sup>16</sup>.

Thank you for consideration of our views. If we can be of any assistance, please do not hesitate to contact us.

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<sup>3</sup> <https://basicresearch.defense.gov/COVID-19/Basic-Researchers-on-COVID-19/>

<sup>4</sup> <https://www.whitehouse.gov/wp-content/uploads/2020/08/M-20-29.pdf>

<sup>5</sup> Ibid

<sup>6</sup> [https://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=300508&WT.mc\\_id=USNSF\\_62&WT.mc\\_ev=click](https://www.nsf.gov/news/news_summ.jsp?cntn_id=300508&WT.mc_id=USNSF_62&WT.mc_ev=click)

<sup>7</sup> <https://nces.nsf.gov/pubs/nsb20203>

<sup>8</sup> Ibid

<sup>9</sup> <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>

<sup>10</sup> <http://www.dtic.mil/dtic/tr/fulltext/u2/a403874.pdf>

<sup>11</sup> <https://armedservices.house.gov/cache/files/2/6/26129500-d208-47ba-a9f7-25a8f82828b0/6D5C75605DE8DDF0013712923B4388D7.future-of-defense-task-force-report.pdf>

<sup>12</sup> <https://www.nap.edu/catalog/11463/rising-above-the-gathering-storm-energizing-and-employing-america-for>

<sup>13</sup> <https://www.compete.org/reports/all/202>

<sup>14</sup> <https://www.nap.edu/catalog/11463/rising-above-the-gathering-storm-energizing-and-employing-america-for>

<sup>15</sup> <https://www.compete.org/reports/all/202>

<sup>16</sup> <http://www.dtic.mil/dtic/tr/fulltext/u2/a433761.pdf>

Sincerely,

Aerospace Industries Association (AIA)  
American Association for the Advancement of Science (AAAS)  
American Chemical Society (ACS)  
American Institute for Medical and Biological Engineering  
American Mathematical Society (AMS)  
American Psychological Association (APA)  
American Society for Engineering Education  
Arizona State University  
ASME  
Association of American Universities (AAU)  
Association of Public and Land-grant Universities (APLU)  
Battelle  
Brown University  
California Institute of Technology  
Carnegie Mellon University  
Columbia University  
Computing Research Association  
Consortium for Ocean Leadership  
Consortium of Social Science Associations (COSSA)  
Cornell University  
Duke University  
Dupont  
Energetics, Inc.  
Federation of Associations in Behavioral & Brain Sciences (FABBS)  
Federation of Materials Societies  
Florida International University  
Florida State University  
George Mason University  
Georgia Institute of Technology  
IEEE-USA  
Indiana University  
Lehigh University  
Louisiana State University  
Louisiana Tech University  
Massachusetts Institute of Technology  
Materials Research Society  
Michigan State University  
Michigan Technological University  
New Mexico State University  
New York University  
Northeastern University  
Northern Illinois University  
Northwestern University  
Oak Ridge Associated Universities  
Ohio State University  
Oregon Health and Sciences University  
Oregon State University  
OSA-The Optical Society  
Pace University  
Penn State University  
Princeton University  
Purdue University  
Rensselaer Polytechnic Institute  
Rochester Institute of Technology  
Rutgers, The State University of New Jersey  
Scripps Institution of Oceanography

Semiconductor Industry Association  
Society for Industrial and Applied Mathematics  
SPIE, the international society for optics and photonics  
SRI International  
Temple University  
Texas A&M University  
The Catholic University of America  
The George Washington University  
The Johns Hopkins University  
The State University of New York  
University of Arizona  
University of California System  
University of California, Davis  
University of California, Irvine  
University of California, Los Angeles  
University of California, Riverside  
University of California, San Diego  
University of Central Florida  
University of Cincinnati  
University of Colorado Boulder  
University of Delaware  
University of Florida  
University of Houston  
University of Illinois System  
University of Iowa  
University of Kansas  
University of Maryland at College Park  
University of Michigan  
University of Missouri System  
University of Nebraska  
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University of Pennsylvania  
University of Pittsburgh  
University of Rhode Island  
University of Rochester  
University of South Florida  
University of Southern California  
University of Tennessee  
University of Texas at San Antonio  
University of Texas System  
University of Virginia  
University of Washington  
University of Wisconsin - Madison  
Vanderbilt University  
Virginia Commonwealth University  
Washington State University  
West Virginia University  
William & Mary  
Woods Hole Oceanographic Institution  
Yale University